

### **REMARKS**

This is a full and timely response to the outstanding non-final Office Action mailed March 29, 2005. Through this response, claims 1, 2, 5-8, 15-20, 25-27, and 31 have been amended. Further, it is respectfully submitted that claim 20 has been amended to address the claim objections, and not for purposes related to patentability. Also, it is respectfully submitted that no new matter has been added. Reconsideration and allowance of the application and pending claims 1-31 are respectfully requested.

#### **I. Allowable Subject Matter**

Applicants appreciate the Examiner's indication that claims 2 and 5 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants have amended independent claims 1 and 6 to incorporate the features of claim 2. Applicants have also amended independent claim 16 to incorporate the features of original independent claim 1 and dependent claim 5. In that it is believed that every rejection has been overcome, it is submitted that each of the claims that remains in the case is presently in condition for allowance.

#### **II. Drawing Objections**

The Office Action provides in Section 1 of page 2 the following:

The drawings are objected to because the block pertaining element (210) in both Figure 2 and Figure 8 needs to have descriptive label, in conformance with 37 CFR 1.84(n) and 1.84(o). For example, a descriptive label of "R-DIVIDER" should be inserted into Figures 2 and 8 to properly describe element (210).

In response to the objection, the drawings have been amended to include a descriptive label in block element 210 of Figures 2 and 8 as suggested by the Examiner. A clean copy of Figures 2 and 8 and a marked-up copy of the same that shows all changes in red ink have been included with this Response. It is asserted that no new matter has been added. Applicants respectfully submit that the drawing objections have been overcome, and respectfully request that the objection be withdrawn.

### **III. Specification Objections**

The specification has been objected to as containing various informalities. Specifically, the Office Action provides in Section 2, page 3 as follows:

The disclosure is objected to because of the following informalities: on page 21, line 3, "signal 208" and "FIG. 7" should be "circuit 208" and "FIG. 4", respectively. Appropriate correction is required.

Applicants have replaced the word "signal" from page 21, line 3 of the specification with the word "circuit". With regard to the suggestion that FIG. 7 be replaced with FIG. 4, Applicants have replaced "7" with "11" consistent with the context of that paragraph.

Although these above described amendments affect various changes to the specification, it is respectfully asserted that no new matter has been added. It is Applicants' belief that the specification, as amended, is not objectionable and it is therefore respectfully requested that the objection be withdrawn.

#### **IV. Claim Objections**

The Office Action alleges the following claim objections:

Claims 5, 15, 20-24, and 31 are objected to because of the following informalities:

In claim 5, line 6 and line 8, “the oscillator” should be “the controllable oscillator”.

In claim 15 (line 4) and claim 31 (lines 4-5), “a control signal” should be “the control signal”.

In claim 20, line 9, “frequency;” should be “frequency; and”.

Wherein claims 21-24 are depended upon claim 20.

Appropriate correction is required.

With regard to claim 5, Applicants have replaced “oscillator” with “controllable oscillator.”

With regard to claims 15 and 31, Applicants have replaced “a control signal” with “the control signal.” With regard to claim 20, Applicants have inserted the term “and” between the means for comparing element and the means for selecting element.

It is Applicants’ belief that claims 5, 15, and 20, as amended, are not objectionable and it is therefore respectfully requested that the objections be withdrawn.

#### **V. Claim Rejections - 35 U.S.C. § 112, Second Paragraph**

##### **A. Statement of the Rejection**

Claim 4 has been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. In particular, the Office Action states that the phrase “the logic” lacks antecedent basis.

Applicants respectfully submit that the above mentioned claim amendments have rendered the rejection moot. In particular, the “logic” element has been incorporated into

independent claim 1, and thus antecedent basis has been provided. Thus, it is respectfully asserted that claim 4 currently defines an embodiment of the invention in the manner required by 35 U.S.C. § 112. Accordingly, it is respectfully requested that the rejection to this claim be withdrawn.

## **VI. Claim Rejections - 35 U.S.C. § 102(b)**

### **A. Statement of the Rejection**

Claims 1, 4, 7-9, 11-13, 15-18, 20-22, and 24-31 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by *Martin et al.* (“*Martin*,” U.S. Pat. No. 5,686,864). Claims 1, 4, 7-9, 11-13, 15-18, 20-22, and 24-31 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by *Taketoshi et al.* (“*Taketoshi*,” U.S. Pat. No. 5,389,898). Applicants respectfully traverse these rejections.

### **B. Discussion of the Rejection**

It is axiomatic that “[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(b).

In the present case, not every feature of the claimed invention is represented in the *Martin* or *Taketoshi* reference.

**Independent Claim 1**

Applicants have amended independent claim 1 to incorporate the features of dependent claim 2. The Office Action stated that claims 2 and 5 are allowable if rewritten in independent form. Applicants respectfully submit that through the amendments to independent claim 1, the rejection is rendered moot, and independent claim 1 is allowable over either *Martin* or *Taketoshi*. Thus, it is respectfully requested that the rejection to independent claim 1 be withdrawn.

Because independent claim 1 is allowable over either *Martin* or *Taketoshi*, dependent claims 2-5 are allowable as a matter of law for at least the reason that the dependent claims 2-5 contain all elements of their respective base claim. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

**Independent Claim 6**

Applicants have amended independent claim 6 to incorporate the features of dependent claim 2. The Office Action stated that claims 2 and 5 are allowable if rewritten in independent form. Independent claim 6 includes features found allowable in independent claim 1, assuming incorporation of features found in either of claims 2 or 5 into claim 1. Applicants respectfully submit that through the amendments to independent claim 6, the rejection is rendered moot, and independent claim 6 is allowable over either *Martin* or *Taketoshi*. Thus, it is respectfully requested that the rejection to independent claim 6 be withdrawn.

## Independent Claim 7

Claim 7 provides as follows (emphasis added):

7. A method for controlling the frequency of an output signal of a controllable oscillator, the controllable oscillator having a plurality of operational states, each of the plurality of operational states defining a distinct frequency for the output signal of the controllable oscillator, the method comprising:

receiving information associated with a predefined frequency;

*generating a timing signal based on the predefined frequency, the timing signal having a plurality of clock pulses;*

*responsive to each of the plurality of clock pulses, generating a first digital word corresponding to a current frequency of the output signal of the controllable oscillator;*

*generating a second digital word corresponding to the predefined frequency;*

*comparing the first digital word to the second digital word; and*

*generating a control signal to change the controllable oscillator to the operational state corresponding to the distinct frequency that best approximates the predefined frequency based on the comparison of the first digital word to the second digital word.*

Applicants note that independent claim 7 includes features that are similar to independent claim 1 as amended, which the Office Action has stated was allowable. Nevertheless, Applicants respectfully submit that neither *Martin* nor *Taketoshi* discloses the emphasized claim features. Further, Applicants respectfully submit that through the amendments to independent claim 7, the rejection is rendered moot, and independent claim 7 is allowable over either *Martin* or *Taketoshi*. Thus, it is respectfully requested that the rejection to independent claim 7 be withdrawn.

Because independent claim 7 is allowable over either *Martin* or *Taketoshi*, dependent claims 8-10 are allowable as a matter of law.

## Independent Claim 11

Claim 11 provides as follows (emphasis added):

11. A method for controlling the frequency of an output signal of a controllable oscillator, the controllable oscillator having a plurality of operational states, each of the plurality of operational states defining a distinct frequency for the output signal of the controllable oscillator, the method comprising:

receiving information associated with a predefined frequency;

determining a current frequency of the output signal of the controllable oscillator, the current frequency corresponding to a current operational state;

comparing the predefined frequency to the current frequency;

based on the comparing the predefined frequency to the current frequency, ***selecting one of two next operational states, the selected next operational state having a distinct frequency which better approximates the predefined frequency.***

Applicants respectfully submit that neither *Martin* nor *Taketoshi* discloses the emphasized claim features. *Martin* discloses (col. 2, lines 9-15) the following operation:

In accordance with the present invention, a VCO control circuit 114 alternately enables each of the plurality of VCO circuits 112 through select ports (sel.sub.1 -sel.sub.n) in order to alternately generate output frequencies with which the synthesizer 100 can attempt to lock on frequency.

Applicants note that “lack” from the above excerpt is likely a misspelling, and “lock” appears to be intended. The system in *Martin* selects from a plurality of ranges in what appears to be a random selection that continues until there is a lock. Nothing in *Martin* discloses that the ***selected next operational state has a distinct frequency which better approximates the predefined frequency.*** If inherency is being relied on for disclosing this feature, MPEP 2112 provides that the “extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference.”

(emphasis added) In the present case, it is likely that a selected next operational state may not have a distinct frequency that better approximates the predefined frequency.

With regard to *Taketoshi*, FIG. 2 from *Taketoshi* appears to suggest that a range of frequencies is selected, and not a *distinct frequency which better approximates the predefined frequency*, as recited in independent claim 11. (see also, column 5, lines 6-35)

Thus, Applicants respectfully submit that neither *Martin* nor *Taketoshi* discloses the emphasized claim features. Further, Applicants respectfully submit that independent claim 11 is allowable over either *Martin* or *Taketoshi*. Thus, it is respectfully requested that the rejection to independent claim 11 be withdrawn.

Because independent claim 11 is allowable over either *Martin* or *Taketoshi*, dependent claims 12-15 are allowable as a matter of law.

#### **Independent Claim 16**

Applicants have amended independent claim 16 to incorporate the features of dependent claim 5. The Office Action stated that claims 2 and 5 are allowable if rewritten in independent form. Independent claim 16 includes features found allowable in independent claim 1, assuming incorporation of features found in either of claims 2 or 5 into claim 1. Applicants respectfully submit that through the amendments to independent claim 16, the rejection is rendered moot, and independent claim 16 is allowable over either *Martin* or *Taketoshi*. Thus, it is respectfully requested that the rejection to independent claim 16 be withdrawn.

Because independent claim 16 is allowable over either *Martin* or *Taketoshi*, dependent claims 17-19 are allowable as a matter of law.



**Independent Claim 20**

Claim 20 provides as follows (emphasis added):

20. A system for controlling the frequency of an output signal of a controllable oscillator, the controllable oscillator having a plurality of operational states, each of the plurality of operational states defining a distinct frequency for the output signal of the controllable oscillator, the system comprising:

means for receiving information associated with a predefined frequency;

means for determining a current frequency of the output signal of the controllable oscillator, the current frequency corresponding to a current operational state;

means for comparing the predefined frequency to the current frequency; and

***means for selecting, based on the comparing the predefined frequency to the current frequency, one of two next operational states, the selected next operational state having a distinct frequency which better approximates the predefined frequency.***

Applicants respectfully submit that neither *Martin* nor *Taketoshi* discloses the emphasized claim features. *Martin* discloses (col. 2, lines 9-15) a system that selects from a plurality of ranges in what appears to be a random selection that continues until there is a lock. Nothing in *Martin* discloses that the ***selected next operational state has a distinct frequency which better approximates the predefined frequency.*** If inherency is being relied on for disclosing this feature, MPEP 2112 provides that the “extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference.” (emphasis added) In the present case, it is likely that a selected next operational state may not have a distinct frequency that better approximates the predefined frequency.

With regard to *Taketoshi*, FIG. 2 from *Taketoshi* appears to suggest that a range of frequencies is selected, and not a ***distinct frequency which better approximates the***

*predefined frequency*, as recited in independent claim 20. (see also, column 5, lines 6-35)

Thus, Applicants respectfully submit that neither *Martin* nor *Taketoshi* discloses the emphasized claim features. Further, Applicants respectfully submit that through the amendments to independent claim 20, the rejection is rendered moot, and independent claim 20 is allowable over either *Martin* or *Taketoshi*. Thus, it is respectfully requested that the rejection to independent claim 20 be withdrawn.

Because independent claim 20 is allowable over either *Martin* or *Taketoshi*, dependent claims 21-24 are allowable as a matter of law.

#### **Independent Claim 25**

Claim 25 provides as follows (emphasis added):

25. A computer readable medium for controlling the frequency of an output signal of a controllable oscillator, the controllable oscillator having a plurality of operational states, each of the plurality of operational states defining a distinct frequency for the output signal of the controllable oscillator, the computer readable medium comprising ***logic configured to receive information associated with a predefined frequency, to execute a binary search algorithm, to determine, based on execution of the binary search algorithm, the distinct frequency for the output signal of the controllable oscillator that best approximates the predefined frequency, and to generate a control signal configured to change the controllable oscillator to the operational state corresponding to the distinct frequency that best approximates the predefined frequency.***

Applicants respectfully submit that neither *Martin* nor *Taketoshi* discloses the emphasized claim features. For example, nothing in *Martin* or *Taketoshi* discloses at least the feature of ***logic configured to execute a binary search algorithm***, as recited in independent claim 25. Applicants respectfully submit that through the amendments to independent claim 25, the rejection is rendered moot, and independent claim 25 is allowable

over either *Martin* or *Taketoshi*. Thus, it is respectfully requested that the rejection to independent claim 25 be withdrawn.

Because independent claim 25 is allowable over either *Martin* or *Taketoshi*, dependent claims 26-27 are allowable as a matter of law.

### **Independent Claim 28**

Claim 28 provides as follows (emphasis added):

28. A computer readable medium for controlling the frequency of an output signal of a controllable oscillator, the controllable oscillator having a plurality of operational states, each of the plurality of operational states defining a distinct frequency for the output signal of the controllable oscillator, the computer readable medium comprising ***logic configured to receive information associated with a predefined frequency, to determine a current frequency of the output signal of the controllable oscillator, the current frequency corresponding to a current operational state, to compare the predefined frequency to the current frequency, and to select, based on the comparing the predefined frequency to the current frequency, one of two next operational states, the selected next operational state having a distinct frequency which better approximates the predefined frequency.***

Applicants respectfully submit that neither *Martin* nor *Taketoshi* discloses the emphasized claim features. *Martin* discloses (col. 2, lines 9-15) a system that selects from a plurality of ranges in what appears to be a random selection that continues until there is a lock. Nothing in *Martin* discloses that the ***selected next operational state has a distinct frequency which better approximates the predefined frequency.*** If inherency is being relied on for disclosing this feature, MPEP 2112 provides that the “extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference.” (emphasis added) In the present case, it is likely that a selected next operational state may not have a distinct frequency that better approximates the predefined frequency.

With regard to *Taketoshi*, FIG. 2 from *Taketoshi* appears to suggest that a range of frequencies is selected, and not a *distinct frequency which better approximates the predefined frequency*, as recited in independent claim 28. (see also, column 5, lines 6-35)

Thus, Applicants respectfully submit that neither *Martin* nor *Taketoshi* discloses the emphasized claim features, and that independent claim 28 is allowable over either *Martin* or *Taketoshi*. Thus, it is respectfully requested that the rejection to independent claim 28 be withdrawn.

Because independent claim 28 is allowable over either *Martin* or *Taketoshi*, dependent claims 29-31 are allowable as a matter of law.

## **VII. Claim Rejections - 35 U.S.C. § 103(a)**

### **A. Statement of the Rejection**

Claims 3, 6, 10, 14, 19, 23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over either *Martin* or *Taketoshi* in view of *Rozenblit et al.* (“*Rozenblit*,” U.S. Pat. No. 6,801,784). Applicants respectfully traverse this rejection.

### **B. Discussion of the Rejection**

As has been acknowledged by the Court of Appeals for the Federal Circuit, the U.S. Patent and Trademark Office (“USPTO”) has the burden under section 103 to establish a *prima facie* case of obviousness by showing some objective teaching in the prior art or generally available knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. *See In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596, 1598

(Fed. Cir. 1988). The Manual of Patent Examining Procedure (MPEP) section 2143 discusses the requirements of a *prima facie* case for obviousness. That section provides as follows:

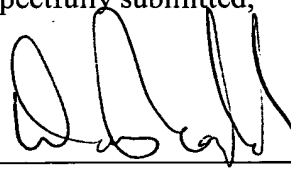
To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teaching. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure.

As explained above, neither *Martin* nor *Taketoshi* disclose all of the features of independent claims 1, 6, 7, 11, 16, and 20 (or 25 and 28). *Rozenblit* fails to remedy the deficiencies discussed above. Thus, it is respectfully submitted that a *prima facie* case of obviousness has not been established in the present case, and that independent claims 1, 6, 7, 11, 16, and 20 are allowable over the proposed combination of references. Because dependent claims 3, 10, 14, 19, 23 contain all of the features of their respective base claim, it is respectfully submitted that claims 3, 10, 14, 19, 23 are allowable as a matter of law.

### CONCLUSION

Applicants respectfully submit that Applicants' pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,



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David Rodack  
Registration No. 47,034

**THOMAS, KAYDEN,  
HORSTEMEYER & RISLEY, L.L.P.**  
Suite 1750  
100 Galleria Parkway N.W.  
Atlanta, Georgia 30339  
(770) 933-9500

**Drawings**

Please replace Figures 2 and 8 with newly submitted figures attached herewith on separate sheets. Applicants have included marked-up sheets showing the amendments made to the figures.

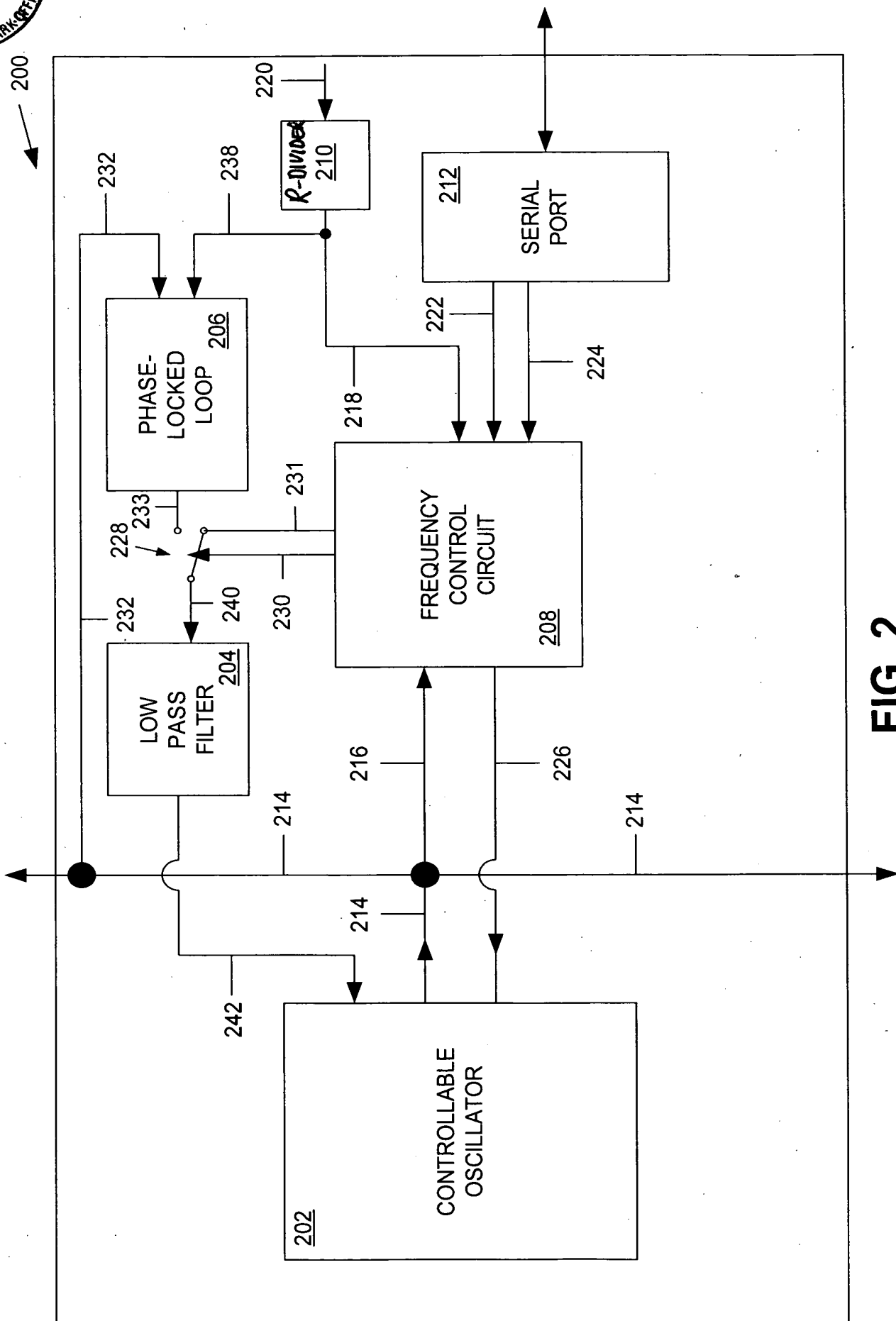
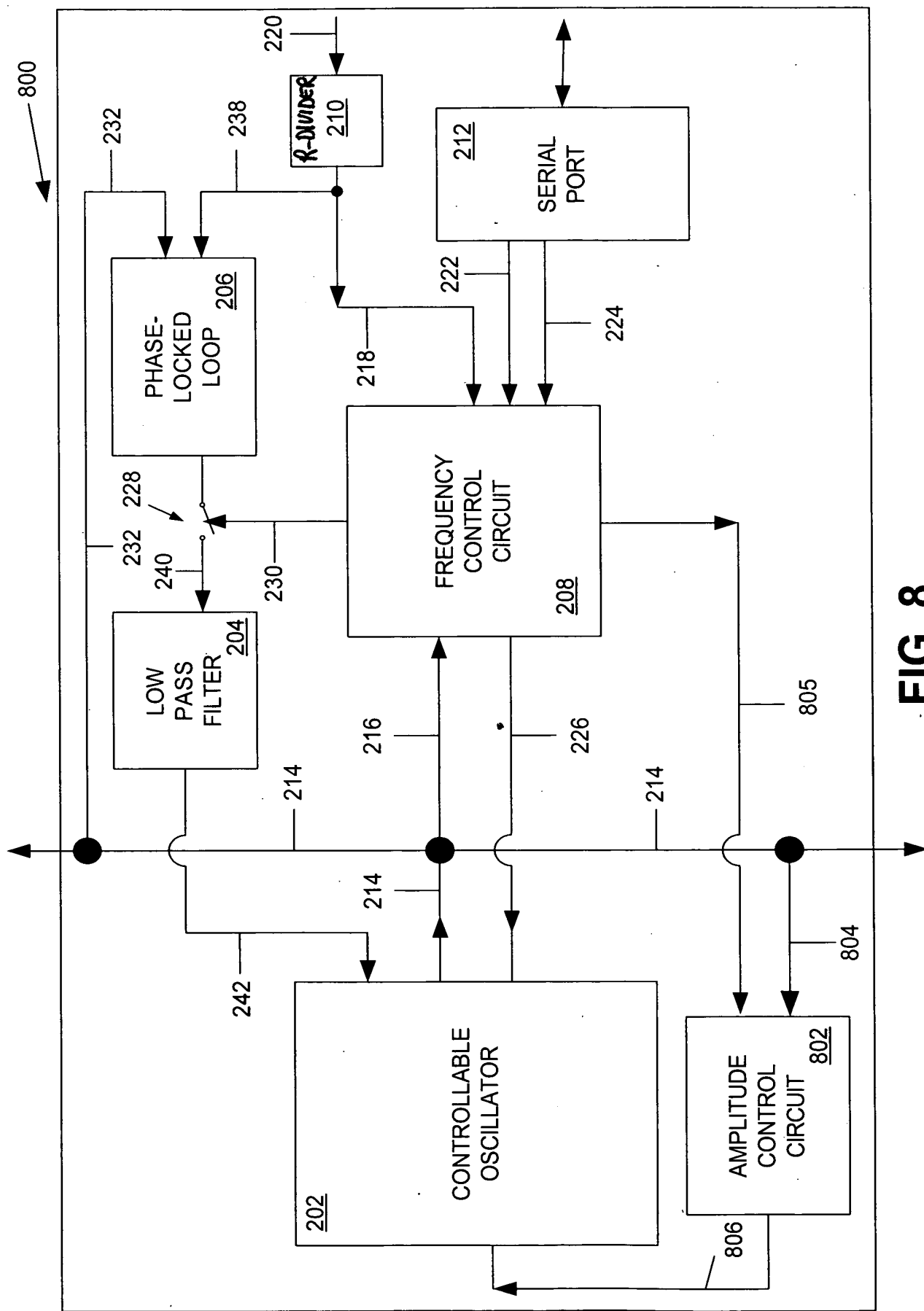


FIG. 2





**FIG. 8**